

## Discovery of *Stygiotrechus* (Coleoptera, Trechinae) at the Southeastern Part of the Kii Peninsula, Central Japan

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**Abstract** A new upper hypogean species of the trechine genus *Stygiotrechus* is described from near the southern end of the Ohminé Mountains at the southeastern part of the Kii Peninsula, Central Japan, under the name of *Stygiotrechus eos*. It belongs to the *ohtanii* group and is distinguished at first sight from the known species of the same species-group by the compressed aedeagus with abruptly decurved apical part. Its locality is widely isolated eastwards from the hitherto known range of generic distribution and approaches to that of *Kurasawatrechus*.

Late in this spring, one of the most unexpected discoveries in the Japanese trechidology was made by the second author in the Kii Peninsula. It was the detection of a habitat of a new *Stygiotrechus* near the southern end of the Ohminé Mountains at the southeastern part of the peninsula!

The known members of *Stygiotrechus* are widely distributed in West Japan along the northern side of the Median Tectonic Zone, from the Gotô Islands in the west to near the eastern end of the Chûgoku Hills in the east, with a small number of species of the *ohtanii* group invading southwards across the tectonic zone into the western part of the Kii Peninsula (UÉNO, 1980; ASHIDA & K. KITAYAMA, 2003). Besides the two species already described (*S. nishikawai* S. UÉNO, 1980, p. 3, figs. 2–4; *S. misatonis* ASHIDA et K. KITAYAMA, 2003, p. 222, figs. 1, 3–4), a third species was found on Mt. Gomadan-zan on the Obako Mountains (OKUDA, pers. comm.), though not yet properly described due to lack of adequate material.

The new locality to be reported in this paper is about 35 km distant to the east by south from Mt. Gomadan-zan beyond the deep valley of the Totsu-kawa, which divides the southern part of the Kii Peninsula into two regions, western and eastern, and approaches to the territory of *Kurasawatrechus*, though there still remains a wide gap (about 65 km in a beeline) between the distributional ranges of *Stygiotrechus* and

*Kurasawatrechus*. It is difficult to explain, or even to speculate on, the route of dispersal of the ancestor of the present species, but it must have come either from the west or from the northwest, since the new species doubtless belongs to the *ohtanii* group, whose known members are distributed in the areas in those directions.

In view of the outstanding importance of the discovery, the authors are going to describe the new species in the present paper under the name of *Stygiotrechus eos*, in the hope that to do so will stimulate other researchers to further efforts for finding out other localities of *Stygiotrechus* in the wide blank areas in the Kii Peninsula. The abbreviations employed herein are the same as those explained in previous papers of UÉNO's.

*Stygiotrechus eos* S. UÉNO et NAITÔ, sp. nov.

(Figs. 1–3)

Length: 2.35–2.65 mm (from apical margin of clypeus to apices of elytra).

Belonging to the *ohtanii* group (cf. UÉNO, 1969, p. 491, 2001, pp. 241–242; ASHIDA & K. KITAYAMA, 2003), and distinguished from all the other members of the species-group by the peculiar configuration of the male genitalia. Externally similar to *S. nishikawai* S. UÉNO from Gonji-ana Cave/Mine on Wasa-yama Hill, but the genae are less convex, particularly at the posterior parts, and the pronotum is a little less transverse on an average and less distinctly lobed at the base, with the sides more or less distinctly sinuate before hind angles which are not sharply denticulate and the front angles obtuse and hardly protrudent. Strikingly different from *S. nishikawai* in the compressed aedeagus with abruptly decurved apical part.

Colour somewhat darker than in *S. nishikawai*, above all in head and prothorax; microsculpture and pubescence as in *S. nishikawai*. Head similar to that of *S. nishikawai*, but the genae are more evenly convex and less tumid at the posterior parts; HW/HL 1.30–1.39 (M 1.34); antennae submoniliform, reaching basal two-ninths to two-sevenths of elytra in ♂, basal two-ninths of elytra in ♀.

Pronotum transverse subcordate, widest at about three-fourths from base, and more gradually narrowed posteriad than anteriad; PW/HW 1.24–1.30 (M 1.26), PW/PL 1.12–1.15 (M 1.14), PW/PA 1.25–1.26 (M 1.26), PW/PB 1.24–1.28 (M 1.26); sides moderately bordered throughout and sparsely ciliated, gently arcuate in front, obviously less so at about middle, more or less distinctly sinuate at about two-ninths from base, and usually with two or three indentations at the sides of basal area; apex about as wide as base, PB/PA 0.98–1.01 (M 1.00), widely arcuate anteriad, with front angles obtuse and usually not produced forwards; base feebly lobed, nearly straight or very slightly emarginate at middle, and shallowly but distinctly emarginate on each side inside hind angle, with the outermost portions almost perpendicular to the mid-line; hind angles either rectangular or somewhat obtuse, rarely denticulate on one side; dorsum moderately convex, steeply declivous at antero-lateral parts, sparsely covered with short suberect hairs, and provided with two pair of short discal setae; median line

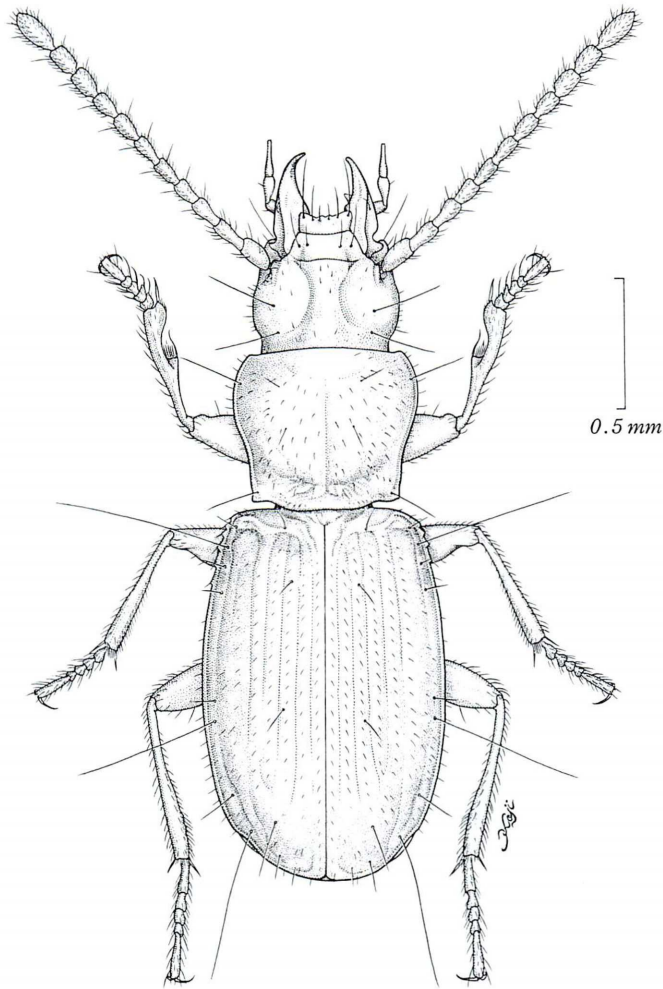
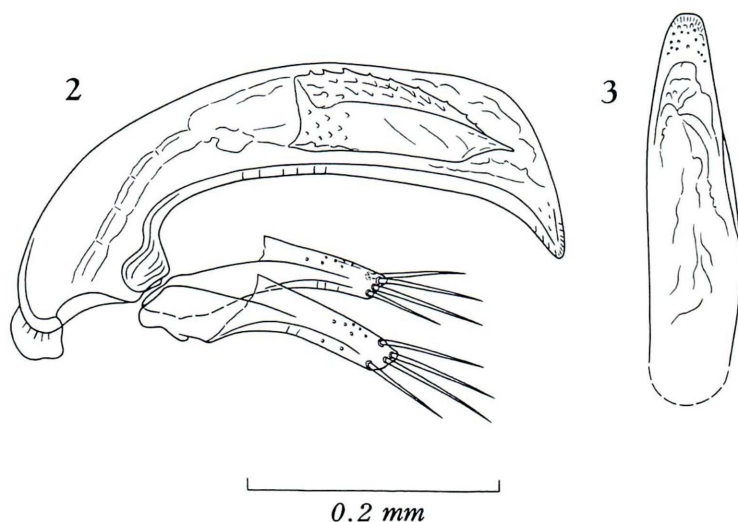


Fig. 1. *Stygiotrechus eos* S. UENO et NAITÔ, sp. nov., ♂, from Shinogô in Kitayama-mura.

deepened posteriad and reaching base; apical transverse impression obsolete, basal one mal-defined; basal foveae small and rather shallow; basal area somewhat uneven.

Elytra as in *S. nishikawai*, though usually (at least in two males examined) more parallel-sided in basal halves, and widest at about or a little before middle; EW/PW 1.30–1.42 (M 1.35), EL/PL 2.29–2.40 (M 2.37), EL/EW 1.51–1.57 (M 1.54); shoulders square, prehumeral borders short and nearly perpendicular to the mid-line; humeral borders distinctly serrate, each bearing four to seven teeth, of which two or three (rarely four) are larger than the remainings; sides very feebly arcuate for the most part, nearly straight behind shoulders, and widely rounded at apices, which form a



Figs. 2–3. Male genitalia of *Stygiotrechus eos* S. UENO et NAITÔ, sp. nov., from Shinogô in Kitayamamura; left lateral view (2), and apical part of aedeagus, dorso-apical view (3).

small obtuse re-entrant angle at suture; no appreciable preapical emargination; dorsum moderately depressed on the disc though steeply declivous in marginal areas, with a transverse impression in basal area; striation as in *S. nishikawai*, though somewhat deeper, apical striole sometimes directed to the site of stria 7; stria 3 with two setiferous dorsal pores at 1/6–1/5 from base and about middle; preapical pore nearer to apical striole than to suture, though more distant from apex than from suture.

Ventral surface and legs as in *S. nishikawai*.

Male genital organ small and rather lightly sclerotized. Aedeagus about two-sevenths as long as elytra, compressed, obviously higher than wide, gently arcuate at middle, moderately curved ventrad at the basal part, and abruptly decurved at the apical part; torsion of aedeagal tube weak; basal part small, with small basal orifice whose sides are rather lightly emarginate; sagittal aileron small though distinct; viewed dorsally, apical lobe gradually narrowed towards subtruncate apex; viewed laterally, apical lobe abruptly narrowed towards blunt extremity, ventrally produced and very slightly curved; ventral margin widely and shallowly emarginate in profile. Inner sac armed with a large copulatory piece about two-fifths as long as aedeagus, acutely produced at the apex, and partially covered with scales on the surface. Styles relatively small and narrow, left style being larger than the right and with reduced ventral apophysis, each bearing four apical setae of various lengths.

*Type series.* Holotype: ♂, 190 m alt., 28–IV–2003, T. NAITÔ leg. Allotype: ♀, 380 m alt., 9–V–2003, T. NAITÔ leg. Paratype: 1 ♂, 380 m alt., 9–V–2003, T. NAITÔ leg. All deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo.

*Type locality.* Shinogô, at the eastern foot of Chausu-yama, 190–380 m in altitude, in Kitayama-mura of Wakayama Prefecture, at the southeastern part of the Kii Peninsula, Central Japan.

*Notes.* The type locality of this interesting species lies at the eastern foot of Chausu-yama (1,181 m in height), a head on a branch ridge at the southernmost part of the Ohminé Mountain Range. The holotype was taken near the lower end of a narrow side gully on the right side of the Shinogô Stream (also called the Shi-no-kawa Stream in recent times) at an altitude of 190 m. It was met at a depth of about 30 cm on the mother rock covered with rather a small quantity of weathered debris mingled with soil.

The allo- and paratypes turned up from a scree deposited at the upper part of the same gully about 380 m above sea-level. They were crawling about through the gravelly soil 30–50 cm below the surface. The gully lies in a plantation of Japanese cedar and cypress, and is fed by a narrow stream.

These habitats of *S. eos* remind us of those of *S. kadanus* S. UENO (2001, p. 234, figs. 1–3, also pp. 242–246). The two species must be upper hypogean in nature, though they look like endogean in facies.

Incidentally, two corpora of a *Kusumia* probably belonging to the *elongata* group were dug out from a colluvium in a gully about 1,000 m south by west of the habitats of *S. eos*. They were found at a depth of 80–100 cm. It is to be hoped that perfect specimens of this zoogeographically interesting species will be obtained in near future and enable us to clarify its systematic status.

## 要 約

上野俊一・内藤隆夫：紀伊半島南東部で発見されたノコメクラチビゴミムシ。—— ノコメクラチビゴミムシ属の甲虫類は、中央構造線の北側に沿って西日本に広く分布するが、それより南では分布が極端に限られ、わずかに和歌山県の北西部で3カ所の生息地が知られるに過ぎなかった。3種ともコンゴウメクラチビゴミムシ種群のもので、これらは和泉・讃岐の両山脈に生息していた母集団から派生して、なんらかの方法で紀ノ川の低地帯を越えた単一の祖先種に由来し、紀伊半島中西部のごく限られた地域にすみついて分化したものだろうと考えられてきた。

ところが今年の春になって、大峰山脈の南端部に近い茶臼山の東麓から、同じ種群に属する1新種が発見された。この生息地は、紀伊半島の南部を東西に2分する十津川の東側に位置し、コンゴウメクラチビゴミムシ種群の既知の分布域から遠く離れている。その由来を明らかにする作業は今後の調査にまたねばならないが、生物地理学的にきわめて重要なこの種の存在を、とにかく正式に記録しておくために、アケボノメクラチビゴミムシ *Stygiotrechus eos* S. UENO et NAITÔ という新名を与えて記載した。

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*Elytra, Tokyo*, **31** (1): 236, June 30, 2003

## A New Record of *Kusumia kitayamai* (Coleoptera, Trechinae)

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*Kusumia kitayamai* ASHIDA (2000, p. 242, figs. 1–4) is an anophthalmic trechine beetle described on three specimens (2 teneral ♂♂, 1 ♀) taken in a small gully at Matsusé near the north-western foot of Wasa-yama Hill in Kawabé-chô at the southwestern part of the Kii Peninsula. No other habitats of the beetle were located until recently in spite of painstaking searches made by more than a dozen researchers.

Late in the last autumn, the second author of the present report succeeded in obtaining three specimens of a *Kusumia* near the source of the Washi-no-kawa River at the southern side of Yahazu-daké Hill, which were conclusively identified later with *K. kitayamai*. This new locality lies on the same hill range as the type locality, which stretches from west to east along the left side of the Hidaka-gawa River, and is 11.3 km distant to the east from the latter in a beeline. Their collecting data are as recorded below.

*Specimens examined.* 2♂♂, 1♀, Yahazu-daké, 420 m alt., near the source of the Washi-no-kawa River at the southern side, Nakatsu-mura, Wakayama Pref., 27–X–2002, T. NAITÔ leg. (NSMT).

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